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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,132	10/23/2001	B. Scott Driggs	020174C-002910US	2449

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EXAMINER

KEASEL, ERIC S

ART UNIT	PAPER NUMBER
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3754

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,132

Applicant(s)

DRIGGS ET AL.

Examiner

Eric Keasel

Art Unit

3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 5-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in Paper No. 7 is acknowledged.
2. Claims 5-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Groups, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Biegelsen et al. (US Patent Number 5,971,355).

Biegelsen et al. disclose a valve comprising six elastomeric layers (see column 6, lines 14 and 15 for the material selection). The embodiment is Fig. 10 has two sets of electrodes that open and close the valve when a potential difference is applied.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Cabuz (US Patent Number 5,836,750).

Cabuz discloses a valve comprising an elastomeric layer (which can be read as multiple elastomeric layers positioned over one another), with electrodes (23, 25) that actuate the deflectable ceiling portion into a flow channel (see Figs. 1-3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Biegelsen et al. in view of Gravesen et al. (US Patent Number 5,452,878).

Biegelsen et al. disclose a valve comprising six elastomeric layers (see column 6, lines 14 and 15 for the material selection). The embodiment in Fig. 10 has two sets of electrodes that open and close the valve when a potential difference is applied. Although Biegelsen et al. briefly mentions micromirrors, there is no clear teaching of a reflective micromirror surface positioned over the ceiling of the flow channel with a physical orientation of the reflective micromirror surface altered when the ceiling of the flow channel is driven into the flow channel.

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Gravesen et al. disclose the use of a micromirror surface on lever (33) on a similar microvalve (see Figs. 8a-9 and column 4, lines 51-58). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the micromirror surface of Gravesen et al. over the ceiling of the flow channel with a physical orientation of the micromirror surface altered when the ceiling of the flow channel is driven into the flow channel in order to effect a deliberate change-over of light paths using the actuation device as taught by Gravesen et al. (see column 4, lines 55-58).

8. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabuz in view of Gravesen et al.

Cabuz discloses a valve comprising an elastomeric layer (which can be read as multiple elastomeric layers positioned over one another), with electrodes (23, 25) that actuate the deflectable ceiling portion into a flow channel (see Figs. 1-3). Gravesen et al. disclose the use of a micromirror surface on lever (33) on a similar microvalve (see Figs. 8a-9 and column 4, lines 51-58). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the micromirror surface of Gravesen et al. over the ceiling of the flow channel with a physical orientation of the micromirror surface altered when the ceiling of the flow channel is driven into the flow channel in order to effect a deliberate change-over of light paths using the actuation device as taught by Gravesen et al. (see column 4, lines 55-58).

Response to Arguments

9. Applicant's arguments filed July 16, 2004 have been fully considered but they are not persuasive.

Applicant argues that the multiple layers of Biegelsen et al. can not be read as "an elastomeric layer" for purposes of claim 1. The examiner disagrees. The claim can not be read so narrowly as to require the entire flow path to reside within a single layer that includes a deflectable ceiling and the walls to the flow path. As disclosed, part of what must be considered a wall is actually part of a different layer (114) and, presumably, applicant's flow path extends beyond the small cross section shown in the drawings. So, the fact that Biegelsen's flow path (226) moves through multiple layers before moving to the layer with a ceiling and part of the wall structure does not distinguish claims 1 and 3 from Biegelsen. In further response to applicant's amendment, the Cabuz reference (of record) is applied, as there should be no question that Cabuz would meet this limitation with respect to claims 1 and 3 at least as well as applicant's disclosure.

Applicant argues that the multiple layers of Biegelsen would render a combination of Biegelsen and Gravesen inoperable. However, it should be noted that Biegelsen explicitly discloses a micromirror (however, the disclosure is not detailed to the extent necessary for anticipation).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Keasel whose telephone number is (571) 272-4929. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mar can be reached on (571) 272-4906. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Keasel 1 MAR 2005
Eric Keasel
Primary Examiner
Art Unit 3754